Federal

CONNECTICUT LOCAL BRIDGE PROGRAM

Fiscal Year 2005

PRELIMINARY APPLICATION

BEAR HILL ROAD over

NATCHAUG RIVER

Chaplin, CT

ConnDOT Bridge No. 04601

Prepared for the
Connecticut Department of Transportation
Local Bridge Program
Newington, Connecticut

Prepared by
WMC Consulting Engineers
87 Holmes Road
Newington, Connecticut

April 2004

CONNECTICUT DEPARTMENT OF TRANSPORTATION

James F. Byrnes, Jr., Commissioner

PRELIMINARY APPLICATION FOR THE LOCAL BRIDGE PROGRAM

Preliminary application is hereby made by the Town/City/Borough of **Chaplin** for possible inclusion in the Local Bridge Program for **Fiscal Year 2005** for the following structure:

North Bear Hill Road over Natchaug River.

Bridge Location: **.4 miles from Route 198**

Bridge Number: **04601** Length of Span: **75 feet**

Sufficiency Rating: **56.77** Priority Rating: **54.07**

Evaluation & Rating Performed by: ___X___ State Forces _____ Others

If Others, Name of Professional Engineer: _____

Connecticut Professional Engineers License Number: _____

Engineering Firm: _____

Engineer's Address: _____

Description of Existing Condition of Structure: *(attach description)*

Description of Project Scope: _____ *(note repair code; attach narrative/preliminary plans & specifications).*

Name of Municipal Official to Contact: **Rusty Lanzit**

Mailing Address**: Town Hall, Rte. 198, 495 Phoenixville Rd., P.O. Box 286, Willimantic, CT 06235-0286**

Telephone: **(860) 455-9455** FAX: **(860) 455-0027**

E-mail: _____

Preliminary Cost Figures:

Preliminary Engineering Fees (Include Breakdown of Fees) *(Not to Exceed 15% of Construction Costs)*	$ 162,000
Rights-of-Way Cost (If Applicable)	$ N/A
Municipally Owned Utility Relocation Cost	$ N/A
Estimated Construction Costs (Include Detailed Estimate)	$ 1,080,000
Construction Engineering (Inspection, Materials Testing) *(Not to Exceed 15% of Construction Cost)*	$ 162,000
Contingencies *(10% of Construction Costs Only)*	$ 108,000
Total Estimated Project Cost	$ 1,512,000

Financial Aid Data:

Federal Reimbursement: *(Limited to qualifying bridges – See Appendix1)*
Total Estimated Project Cost multiplied by 80%:

Project Reimbursement Request $ $1,209,600.00

State Local Bridge Project Grant: *(Cannot be combined with Federal reimbursement)*

Allowable Grant Percentage _____% of Total Cost.

Project Grant Request $ _____

State Local Bridge Project Loan: *(Maximum 50% of total project cost)*

Project Loan Request $ 0

Schedule: (Anticipated Dates)

Public Hearing Conducted:	**Fall 2005**
Design Completion:	**Winter 2005/6**
Property Acquisition Completion:	**N/A**
Utilities Coordination Completion:	**N/A**
Construction Advertising:	**Winter 2005/6**
Supplemental Application Submission:	**Spring 2006**
Start of Construction:	**Spring 2006**
Completion of Construction:	**Fall 2006**

I hereby certify that the above is accurate and true, to the best of my knowledge and belief.

Signature: Rusty Jarrett
(Chief Elected Official, Town Manager, or other Officer Duly Authorized)

Date: 5/13/04

Return completed applications to:

Mr. Stanley C. Juber
Administrator of the Local Bridge Program
Connecticut Department of Transportation
2800 Berlin Turnpike, P.O. Box 317546
Newington, Connecticut 06131-7546

2. Description / Existing Condition

The bridge carrying Bear Hill Road over the Natchaug River consists of corrugated metal bridge deck on two simple span multiple plate steel girders with a bituminous concrete wearing surface. The original structure was built in 1969 and was rehabilitated in 1990. The existing bridge travel way width is approximately 23.4 feet and is referenced as ConnDOT Bridge No. 04601. The bridge currently has a posted weight limit of 30 tons. The structure has a maximum span of 36 feet and is eligible for State and Federal funding under the Local Bridge Program for the fiscal year 2005.

Deck

According to the ConnDOT bridge inspection report, dated July 9, 2003 the deck is in fair condition (rating=5). The corrugated metal decking is surfaced with ½ inch oil/stone wearing surface over 2 inches of bituminous concrete. There are open cracks in the surface at the deck ends and in the pier area both in the original surface and bituminous patches. The undersides of the corrugated metal decking show light rusting at the fascias and along the form edges. The overlapping forms at the pier show light to heavy rusting with active leakage. The bridge rail consists of H-beam uprights welded to the fascia beams with an angle iron cap and metal beam rail.

Superstructure

According to the ConnDOT bridge inspection report, dated July 9, 2003, the superstructure is in poor condition (rating=4). There are no bearings over the westerly abutment with the steel stringers resting directly on the bridge seat. The easterly abutment bearings are thin plate about 1/8" thick with moderate rust and thin laminar rust between the plates and steel stringer lower flanges. Bearing #8 is undermined due to spalling of the bridge seat. The pier bearing appear to made of plow blade material. The pier cap is uneven and bearing surface with the stringers is not uniform.

The steel stringers are salvage material. Many of the stringers show flame cut holes on the ends All stringer ends of the easterly span show heavy laminar rusting of the web and both top and bottom flanges with section loss. Stringers #5 & #6 of the westerly span also show heavy laminar rusting over the pier with section loss. Stringer #5 has a perforation hole in the lower web area measuring 23" long by up to 1" high.

Substructure

According to the ConnDOT bridge inspection report, dated July 9, 2003, the substructure is in poor condition (rating=4). The cast in place concrete abutments were rehabilitated in 1990, they have a stepped block shape with a concrete rub coat. Both abutments show vertical cracking and delamination of the rub coat. The easterly cap shows spalling at the edges. The back walls are of channel steel with areas of heavy rusting and some laminar sheets. The pier cap was not rehabilitated and shows areas of spalling, loose and punky concrete. A square block structure

has been cast around the original pier stem, it shows random cracking and areas of light honeycomb. The westerly abutment wing walls are constructed of precast conrete blocks. There are boulders placed along the northern side of the easterly abutment, the is no wingwall at the southerly end of the abutment.

Channel and Channel Protection

According to the ConnDOT bridge inspection report, dated November 9, 1990, the channel is in satisfactory condition (rating=6). There is 2 vertical feet of scour along the nose of the pier. There is embankment encroachment with banks overhanging the channel, there is no riprap armoring.

Approach Condition

According to the ConnDOT bridge inspection report, July 9, 2003, the approach is in satisfactory condition (rating=6). The metal beam rail on the structure is carried onto the approaches. The connection at the northeasterly corner is partially disconnected. The pavement at the ends of the bridge have been patched numerous times and is breaking up.

3. Proposed Condition Replace Entire Structure

The existing structural evaluation rating is 4 (meets minimum tolerable limits). Based on the structural condition, the bridge warrants a complete replacement. The proposed replacement would include the following:

1) Remove the existing structure in its entirety, including removing the existing to below streambed grade.
2) Install new reinforced concrete abutments and wingwalls founded on steel piles.
3) Install a new prestressed concrete deck with a 26' travelway.
4) Install a new bridge rail system on new reinforced concrete parapets.
5) Place membrane waterproofing over the entire structure.
6) Install new guide railing and approaches.

Estimated construction cost for the work is $1,080,389.00. A detailed estimate is provided on the following pages.

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

INSPECTION REPORT TRANSMITTAL FORM
Form BRI-27, Rev. 6/00

Structure No.	04601	Town	CHAPLIN
Inspection Date	7/9/2003	Inspectors	TEAM 2

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Loose Forms (not bound in report)

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Forms

BRI-18, Bridge Inspection Form	6
BRI-19, Highway Bridge Inventory Form	2

Comments:

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Connecticut Department of Transportation
Bridge Inspection Report BRI-18

BRIDGE #: 04601 **INSPECTION DATE:** 7/9/2003

INSPECTION TYPE: Routine **PREVIOUS INSPECTION DATE:** 8/29/2001 **SNOOPER REQUIRED:** No
INSPECTION PERFORMED BY: TEAM 2 **SNOOPER USED:** No

TOWN: CHAPLIN **FEATURE CARRIED:** NO BEAR HILL ROAD **YEAR BUILT:** 1969
LOCATION: .4 MI FROM JCT ROUTE 198 **FEATURE INTERSECTED** NATCHAUG RIVER **YEAR REBUILT:** 1990
MAIN MATERIAL: Steel **MAIN DESIGN:** Stringer/Multi-beam or Girde

INSPECTION VISITS:
Inspection Date: 7/9/2003 **Start Time:** 7:45 AM
Temperature: 72 °F **End Time:** 10:00 AM

INSPECTORS:
Inspector: J. Brndiar **Task:** LEAD BRIDGE INSPECTOR
Inspector: P. Venoutsos **Task:** BRIDGE INSPECTOR

58. DECK **OVERALL RATING** 5

	RATING	
OVERLAY	6	THE ONE-HALF INCH THICK, OIL AND STONE SURFACE TREATMENT, OVER TWO INCHES OF BITUMINOUS MATERIALS, OVER STAY IN PLACE FORMS, STILL SHOWS FULL WIDTH TRANSVERSE CRACKING, OPEN A MAXIMUM OF ONE INCH, MAINLY IN THE AREAS OF THE DECK, ADJACENT TO THE PIER. AREAS OF BITUMINOUS PATCHES, ARE NOTED ALONG EACH DECK END, FROM THE REPAIR OF PAST REPORTED DECK END SPALLING. BOTH DECK ENDS SHOW MULTIPLE TRANSVERSE CRACKING, WITHIN THE PAST SURFACES, AS WELL AS IN THE NEWER BITUMINOUS PATCHES. SOME SCRAPES, AND GOUGES, ALONG THE DECK ENDS ARE ALSO NOTED. BOTH SHOULDERS SHOW LIGHT TO MODERATE SAND ACCUMULATION, WITH LIGHT SURFACE GOUGES. THE OUTSIDE FASCIA DECK EDGE PLATES STILL SHOW LIGHT TO MODERATE RUSTING, ALONG THEIR EDGES.
DECK STR. CONDITION	5	THE UNDERSIDES OF THE STAY IN PLACE FORMS SHOW LIGHT RUSTING OF THE FORM EDGES, ALONG BOTH OUTSIDE FASCIAS. THE FORM OVERLAP JOINTS OVER, AND ADJACENT TO, THE PIER SHOW SIGNS OF ACTIVE LEAKAGE, AND LIGHT TO HEAVY RUSTING. AREAS OF LIGHT RUSTING ARE ALSO NOTED ALONG LOCATIONS, ADJACENT TO THE STRINGER UPPER FLANGES. THE TOTAL AREA OF DETERIORATION, IS ABOUT TWO PERCENT.
CURBS	N	THIS STRUCTURE SHOWS NO CURBS.
MEDIAN	N	THIS STRUCTURE SHOWS NO BRIDGE MEDIAN.
SIDEWALKS	N	THIS STRUCTURE SHOWS NO SIDEWALKS.
PARAPET	N	THIS STRUCTURE SHOWS NO PARAPETS, OR RAILBASES.
RAILING	7	BOTH BRIDGE RAILS ARE COMPOSED OF H-BEAM POSTS, ATTACHED TO STEEL STAND-OFFS, WHICH ARE WELDED TO THE FASCIA STRINGER WEBS, AN ANGLE IRON CAP, WITH ONE COURSE OF METAL BEAM RAIL CARRIED ACROSS THE STRUCTURE, FROM THE APPROACH ROADWAY. THE SURFACES STILL SHOW AREAS OF BLUSH, AND LIGHT SPOTTY RUSTING, WITH SMALL POCKETS OF PEELING PAINT. THERE IS STILL A MINOR COLLISION RUB ALONG THE NORTHEASTERLY CORNER.
PAINT	N	
FENCE	N	THIS STRUCTURE SHOWS NO BRIDGE FENCE.
DRAINS	N	THIS STRUCTURE SHOWS NO BRIDGE SCUPPERS, OR PVC DECK WEEPS.
LIGHTING STANDARD	N	THIS STRUCTURE SHOWS NO BRIDGE LIGHTING.
UTILITIES TYPE/SIZE	N	THIS STRUCTURE SHOWS NO UTILITIES.
CONSTRUCTION JOINTS	N	
EXPANSION JOINTS	N	WHILE THERE ARE NO FORMAL EXPANSION JOINTS, THE OVERLAY SURFACE, AND OLDER PAST REPAIRED AREAS, SHOWS MULTIPLE TRANSVERSE CRACKS, ALONG

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58. DECK **OVERALL RATING** 5

EACH END OF THE STRUCTURE.

59. SUPERSTRUCTURE **OVERALL RATING** 4

	RATING	
BEARING DEVICES	4	THERE ARE NO BEARINGS OVER THE WESTERLY ABUTMENT. THE STRINGERS REST ON A THIN CONCRETE LEVELING CAP. THE CAP STILL RINGS HOLLOW ALONG THE OUTSIDE OF STRINGER 9. THE BEARINGS OVER THE PIER, ARE PLOW BLADE TYPE MATERIAL. THEY SHOW A VERY WAVY TEXTURE, AND A NON-UNIFORM BEARING TO THE CAP, BECAUSE THE CAP ITSELF, IS WAVY. THEY ALSO SHOW AREAS OF HEAVY RUSTING, WITH THICK LAMINAR SHEETS, MODERATE PITTING, AND VISIBLE LOSS AREAS. THE BEARINGS OVER THE EASTERLY ABUTMENT, ARE A VERY THIN PLATE TYPE, ABOUT AN EIGHT OF AN INCH IN THICKNESS. THEY SHOW MODERATE RUSTING, WITH THIN SHEETS OF LAMINAR, AND IMPACTED RUST BETWEEN THE PLATE, AND STRINGER LOWER FLANGES. BEARINGS FIVE, EIGHT, AND NINE, SHOW A NON UNIFORM BEARING SURFACE, AND SPREADING BETWEEN THE PLATE, AND LOWER FLANGES. BEARING THREE, SHOWS A QUARTER INCH GAP BETWEEN THE PLATE AND CAP, AND THE PLATE TO LOWER FLANGE. THE EAST EDGE OF BEARING PLATE EIGHT, EAST SPAN OVER THE PIER, IS NOW UNDERMINED UP TO 3 INCHES, DUE TO SPALLING OF THE PIER CAP.
STRINGERS	5	THE SALVAGED STRINGER SUPERSTRUCTURE, SHOWS FLAME CUT HOLES OF VARIOUS STRINGER ENDS, OVER THE EAST ABUTMENT, AND ALONG THE FASCIA STRINGER ENDS, OVER EACH SIDE, OF THE PIER. THIS HAS BEEN PAST DOCUMENTED. THE STRINGERS SHOW AREAS OF BLUSH, AND SPOTTY RUST, TO THE WEBS AND LOWER FLANGES, OF THE INTERIOR STRINGERS. ALSO NOTED ARE MILL SCALE, FINS, AND SLIVERS. THE FASCIA STRINGERS, SHOW LIGHT TO MODERATE RUSTING OF THE INTERIOR TOP FLANGES, THRU-OUT. THE INTERIOR STRINGER TOP FLANGES, SHOW ISOLATED AREAS OF MODERATE TO HEAVY RUST AREAS. MANY BOTTOM FLANGES ARE BENT UPWARDS, AS WELL AS LATERALLY. STRINGER 5, OVER THE EAST ABUTMENT, SHOWS HEAVY RUSTING WITH LAMINAR SHEETS. STRINGER 7, OVER THE EAST ABUTMENT, SHOWS HEAVY RUSTING WITH LAMINAR SHEETS. STRINGER 8 OVER THE EAST ABUTMENT, SHOWS HEAVY RUSTING WITH LAMINAR SHEETS, TO THE BOTTOM FLANGE, THE EDGE HAS BEEN REDUCED. REFER TO THE SECTION LOSS NOTES. THE FLANGE HAS PAST BENT WHEN STRUCK WITH A HAMMER. STRINGER 9, OVER THE EAST ABUTMENT, THE OUTSIDE LOWER FLANGE, AND A PORTION OF THE WEB, ARE COVERED WITH SAND DEBRIS. THERE IS A BAND OF LAMINAR RUST TO THE LOWER WEB, MEASURING TWO INCHES HIGH, BY FIVE FEET IN LENGTH. THERE IS SOME PITTING. ALL STRINGERS ENDS OF THE EASTERLY SPAN, OVER THE PIER, SHOW HEAVY RUSTING WITH LAMINAR SHEETS, OF THE UPPER, AND LOWER FLANGES, AS WELL AS WEB AREAS. THERE IS LOSS OF SECTION. THE TOP FLANGES OF STRINGERS 5, AND 6, OVER THE PIER, OF THE WESTERLY SPAN SHOW HEAVY RUSTING WITH LAMINAR SHEETS, OF THE TOP FLANGES. STRINGER 5 OF THE WESTERLY SPAN, OVER THE PIER, STILL SHOWS A PERF HOLE TO THE LOWER WEB AREA, MEASURING 23 INCHES LONG, BY UP TO 1 INCH HIGH.
GIRDERS	N	
FLOOR BEAMS	N	
TRUSSES-GENERAL	N	
TRUSSES-PORTALS	N	
TRUSSES-BRACING	N	
PAINT	5	REFER TO THE ABOVE DESCRIPTIONS.
RUST	4	REFER TO THE ABOVE DESCRIPTIONS.
MACHINERY MOV SPAN	N	

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59. SUPERSTRUCTURE **OVERALL RATING** 4

RIVETS & BOLTS	N	
WELDS & CRACKS	8	THE STRINGERS ARE CHECKED HANDS-ON.
TIMBER DECAY	N	
CONCRETE CRACKING	N	
COLLISION DAMAGE	8	THE SUPERSTRUCTURE SHOWS NO COLLISION DAMAGE.
MEMBER ALIGNMENT	8	
DEFLECT. UNDER LOAD	N	
VIBR. UNDER LOAD	N	
STAND PIPES	n	
BARREL LADDERS	N	

ARE BARREL LADDERS OSHA COMPLIANT?

60. SUBSTRUCTURE **OVERALL RATING** 4

	RATING	
ABUTMENTS-STEM	6	BOTH ABUTMENTS ARE A CAST IN PLACE, TRI-STEP BLOCK SHAPE, WITH A CONCRETE RUB COAT FINISH. BOTH SHOW VERTICAL CRACKING, WITH DELAMINATIONS OF THE RUB COAT, POURLINE CRACKING, SHRINKAGE WITH CURING CRACKING, HONEYCOMBING, AND LIGHT SCALE AREAS. THE WESTERLY ABUTMENT SHOWS SEVERAL DELAMINATIONS ALONG THE UPPER CAP, ADJACENT TO THE STRINGERS. THE EASTERLY CAP EDGE SHOWS SOME MINIMAL EDGE SPALLING, BUT THE BEARINGS ARE NOT THREATENED.
ABUTMENTS-BACKWALL	5	THE CHANNEL SHAPED STEEL BACKWALLS, SHOW POCKETS OF MODERATE, TO HEAVY RUSTING, SOME WITH LAMINAR SHEETS, OF BOTH FLANGE AREAS, WITH LIGHT RUST AREAS, ALONG THE WEBS.
ABUTMENTS-FOOTINGS	6	SIX LINEAR FEET OF THE FOOTING EDGE, AND TOP FASCIA, ARE STILL VISIBLE, ALONG THE WESTERLY ABUTMENT. THE PORTION THAT IS VISIBLE SHOWS LIGHT SCALING. THERE ARE ALSO TWO, CONCRETE TRANSVERSE STRUTS, BETWEEN THE PIER, AND THE WESTERLY ABUTMENT. THEY SHOW ONLY LIGHT SCALING.
ABUT.-SETTLEMENT	8	THERE ARE NO SIGNS OF SETTLEMENT TO THE ABUTMENTS.
ABUTMENTS-WINGWALLS	7	TWO FOOT, BY FOUR FOOT, CONCRETE PRE-CAST BLOCKS, ARE USED AS WINGS ALONG THE WESTERLY ABUTMENT. THEY SHOW VEGETATION, AND EMBANKMENT OVERBURDEN. BOULDERS ARE PLACED ALONG THE NORTHERLY END, OF THE EASTERLY ABUTMENT. IT SHOWS SMALL FILLER STONE VOIDS. THERE IS NO FORMAL WINGWALL ALONG THE SOUTHERLY CORNER, OF THE EASTERLY ABUTMENT.
PIERS/BENTS-CAPS	4	THE ORIGINAL PIER CAP IS VISIBLE, AND HAS NOT RECIEVED REHABILITATION REPAIRS IN THE PAST. IT STILL SHOWS AREAS OF MULTIPLE CRACKING, AND DELAMINATIONS TO THE RUB COAT, WITH HORIZONTAL POURLINE CRACKING. THE SOUTHERLY END OF THE CAP, SHOWS ABOUT 4 SQUARE FEET OF CORNER SPALLING, ANDSPALLING OF THE LOWER CAP BETWEEN THE CORNERS, ABOUT THREE INCHES IN DEPTH, REVEALING VERY LOOSE, AND PUNKY CONCRETE. THE REMAINING SURFACES WHERE NOT SPALLED, RING HOLLOW WHEN STRUCK WITH A HAMMER. THE EASTERLY FASCIA, UNDER STRINGERS THREE, AND FOUR, SHOW FOUR SQUARE FEET OF SPALLING, ABOUT TWO INCH IN DEPTH, AND 2.5 SQUARE FEET OF SPALLING, WITH ADJACENT DELAMINATIONS, UNDER STRINGER 8, PAST UNDERMINING THE BEARING PLATE, UP TO 3 INCHES.
PIERS/BENTS-PILE BENT	N	

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60. SUBSTRUCTURE **OVERALL RATING** 4

PIERS/BENTS-COLUMN	7	A CAST IN PLACE, SQUARE BLOCK STRUCTURE, HAS BEEN CONSTRUCTED AROUND THE ORIGINAL STEM AREA, IN AN ATTEMPT TO ENCASE THE ORIGINAL STEM AREA. IT SHOWS RANDOM CRACKING, WITH AREAS OF LIGHT HONEYCOMB.
PIERS/BENTS-FOOTINGS	6	THE FOOTING IS STILL GENERALLY VISIBLE AROUND THE PERIMETER OF THE PIER. THE NORTHERLY INLET FASCIA OF THE FOOTING, IS STILL EXPOSED UP TO 24 INCHES HIGH. THE FOOTING SHOWS LIGHT TO MODERATE SCALING, WITH TRANSVERSE CRACKING, ALONG THE CAP.
PIERS/BENTS-SETTLEMent	8	THERE ARE NO SIGNS OF SETTLEMENT TO THE PIER.
EROSION-SCOUR	6	TWO VERTICAL FEET OF SCOUR, HAS PAST OCCURED AT THE NOSE OF THE PIER. THIS TAPERS OFF AS YOU MOVE DOWNSTREAM ALONG THE STEM.
CONCRETE CRACK-SPALL	4	REFER TO ALL ABOVE DESCRIPTIONS.
STEEL CORROSION	N	
PAINT	N	
TIMBER DECAY	N	
COLLISION DAMAGE	8	THE SUBSTRUCTURE SHOWS NO COLLISION DAMAGE.
DEBRIS	7	THERE IS LIGHT SAND DEBRIS ON THE PIER, AND ABUTMENT CAPS.

61. CHANNEL PROTECTION **OVERALL RATING** 6

	RATING	
CHANNEL SCOUR	6	AS NOTED EARLIER, THERE IS TWO VERTICAL FEET OF PAST NOTED SCOUR, ALONG THE NOSE OF THE PIER. THE WATER DEPTH ALONG THE INLET, CAN RANGE FROM ONLY A COUPLE OF INCHES, TO AS MUSH AS 16, AT THIS TIME. THE WATER DEPTH IN FRONT OF THE PIER, IS AS MUCH AS 2.5 FEET.
EMBANKMENT EROSION	6	EMBANKMENT ENCROACHMENT, IS STILL NOTED TO THE SOUTHWESTERLY, AND SOUTHEASTERLY BANKS. THE NORTHEASTERLY, AND NORTHWESTERLY BANKS, SHOW PAST EROSION, EXPOSING TREE ROOT SYSTEMS.
DEBRIS	6	THERE IS STILL A SILT ISLAND IN PLACE, DOWNSTREAM OF THE PIER. LIGHT TIMBER DEBRIS, IS NOTED ALONG THE EMBANKMENTS.
VEGETATION	6	ALL BANKS ARE WELL VEGETATED, AND OVERHANG THE CHANNEL.
CHANNEL CHANGE	6	THE CHANNEL HAS PAST CHANGED DUE TO ENCROACHMENT, EROSION, AND SCOUR.
FENDER SYSTEM	N	
SPUR DIKES & JETTIES	N	
RIP RAP	N	RIP-RAP IS NOT USED ALONG THE BANKS OF THIS CHANNEL.

62. CULVERTS & RETAINING WALL **OVERALL RATING** N

APPROACH CONDITION **OVERALL RATING** 6

	RATING	
APPROACH SLAB	N	
RELIEF JOINTS	N	
APPROACH GUIDE RAIL	7	LONGER SECTIONS OF METAL BEAM RAILING, ARE NOTED ALONG THE WESTERLY APPROACH SHOULDERS, AND CARRIED OVER THE STRUCTURE. THE RAIL ATTACHMENT TO THE BRIDGE AT THE NORTHWESTERLY CORNER, HAS BECOME PARTIALLY DISCONNECTED, AND IS STILL BOWING OUT SOMEWHAT, AND ALSO SHOWS SOME LONGITUDINAL TORN AREAS. VERY SHORT SECTIONS OF RAILING, ARE

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APPROACH CONDITION **OVERALL RATING** 6

NOTED ALONG THE EASTERLY APPROACH SHOULDERS. THE RAILING IS STILL DENTED AT THE STRUCTURE, ALONG THE NORTHEASTERLY CORNER.

APPROACH PAVEMENT 6 — THE OIL AND STONE APPROACH ROADWAY SURFACES, SHOW LONGITUDINAL, TRANSVERSE, AND RANDOM CRACKING, SOME ARE OPEN UP TO 1\2 INCH, PAST BREAKAGE ALONG THE EASTERLY, AND WESTERLY ENDS OF THE STRUCTURE, BITUMINOUS PATCHES, MULTIPLE TRANSVERSE CRACKING WITH LIGHT BREAKAGE ALONG BOTH DECK ENDS, SETTLEMENT ALONG BOTH DECK ENDS OF UP TO 1 INCH, AND AN UNEVEN SURFACE. THERE ARE NEWER BITUMINOUS PATCHED AREAS ALONG EACH END OF THE STRUCTURE, DUE TO HOLES FOUND, IN THE PAST.

APPROACH EMBANKMENT 7 — MINOR EROSION, FROM ROADWAY RUN-OFF, IS NOTED ALONG ALL BANKS.

TRAFFIC SAFETY FEATURES:

BRIDGE RAILINGS	0
TRANSITIONS	0
APPROACH GUARDRAILS	0
APPR. GUARDRAIL ENDS	0

LOAD POSTING

SINGLE UNIT (TONS)	30
HS (TONS)	
4 AXLE (TONS)	
3S2 (TONS)	
ADVANCE WARNING Y/N	8
LEGIBILITY	8
VISIBILITY/LOCATION	8

MISC.

MIN VERT. UNDERCLR.	0' 0"
POSTED CLR. UNDER BRIDGE	0' 0"
POSTED CLR. ON BRIDGE	0' 0"
ADVANCE WARNING (Y/N)	No
SPEED LIMIT (IF ANY)	0 MPH

CHARACTER OF TRAFFIC

THE TRAFFIC VOLUME WAS LIGHT OVER THE STRUCTURE DURING THE INSPECTION, WITH ALL TYPES OF VEHICLES NOTED.

ADDITIONAL NOTES

DURING THE 2001 INSPECTION OF THIS STRUCTURE, THE CHAPLIN TOWN CREW HAD TO BE NOTIFIED, VIA SENIOR ENGINEER DAVID TASSAVOR, DUE TO A HOLE ALONG THE EASTERLY END OF THE STRUCTURE, OVER THE BACKWALL, MEASURING ABOUT .5 SQUARE FOOT. THIS AREA WAS FILLED IN WITH BITUMINOUS PATCH. THIS HOLE APPEARED TO BE A HAZARD TO MOTORCYCLE, OR BICYCLE TRAVEL. IT APPEARS THAT THIS AREA MAY AGAIN OPEN UP SOMETIMES IN THE FUTURE.

ADDITIONAL COMMENTS:

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Connecticut Department of Transportation

Bridge Inspection Report BRI-18

BRIDGE #: 04601 **INSPECTION DATE:** 7/9/2003

Inspectors' Signatures:

1) John C. Brudnicki **Date:** 07/09/2003 NICET #ET 081734 EXP. 2-2005.

2) _____ **Date:** __/__/__

3) _____ **Date:** __/__/__

4) _____ **Date:** __/__/__

P.E. Signature: _____ **Date:** __/__/__

P.E.#: _____

Reviewed by: _____ **CDOT** **Date:** 10/10/03

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BRIDGE NUMBER 04601 , THE TOWN OF CHAPLIN – NORTH BEAR HILL ROAD OVER THE NATCHAUG RIVER.

MAINTENANCE RECOMMENDATIONS AS OF AUGUST 29, 2001 BY LEAD BRIDGE INSPECTOR JOHN G. BRNDIAR.

1) *SEAL THE SURFACE CRACKING OVER THE STRUCTURE.*

2) *CLEAN AND PAINT THE BRIDGE RAILINGS.*

3) *APPLY PROPER JOINTS ALONG THE ENDS OF THIS STRUCTURE. THE BITUMINOUS SURFACE IS BREAKING UP, CRACKING, AND PAST SPALLED. THE SURFACE WILL AGAIN BREAK UP, AND CREATE HOLES ALONG THE ENDS OF THE STRUCTURE.*

4) *CLEAN AND PAINT THE BEARINGS, AND STRUCTURAL STEEL.*

5) *WELD NEW PLATE OVER THE WEBS WHERE LOSS IS NOTED.*

6) *REPAIR THE PIER CAP, WHERE SPALLING IS NOTED UNDER STRINGER 8, AND THE BEARING PLATE IS UNDERMINED.*

	7-2003	J. BRNDIAR
NO.	DATE	DESCRIPTION
REVISIONS		

Bridge Number **04601**

Inspected By: J. Burdian & P. Vendetti

Sufficiency Rating 72.8

Previous Inspection Date 8/29/2001

BS&E Received ☑ Data Entry By: Juan Guzman

Copies Made ☐ Data Entry Date: 12-17-03

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BRIDGE SAFETY & EVALUATION
STRUCTURE EVALUATION

SHEET 1 OF 2 FORM BRI-19 REV 10/00

SHEET 3 OF 28 (INSP. REPORT)

90) Inspection Date	Inspection Team	91) Frequ	Class:
07/09/03	202	24	01

Indepth Insp	Deck Survey	Access	Flagman
6/9/1999		0	0

CRITICAL FEATURE INSPECTIONS

	Type	Frequency	Team	Date
Fracture:				
Uwater:				
Special:				

RED FLAG ☐

IDENTIFICATION

Bridge Name

Town Name CHAPLIN Town Code 13810

5) Inventory Route:

A) Record Type 1

B) Signing Prefix 5 City Street

C) Level of Service 0 None of the bel

D) Route Number 00000

E) Directional Suffix 0 NA

6) Feature Intersected NATCHAUG RIVER

7) Facility Carried: NO BEAR HILL ROAD

JJ NORTH BEAR HILL RD

9) Location .4 MI FROM JCT ROUTE 198

JJ .4 MILE EAST OF ROUTE 198

11) Milepoint 1.73 Miles

16) Latitude 41 deg 48 min 00 sec

17) Longitude 72 deg 7 min 6.00 sec

98) Border Bridge:

A) State Code B) Percent Responsibility %

C) Border Town Name

99) Border Bridge Structure No

STRUCTURE TYPE AND MATERIAL

43) Structure Type, Main:

A) Material 3 Steel B) Design Type 2 Stringer/Multi-beam or

44) Structure Type, Approach:

A) Material 0 Other B) Design Type 0 Other

45) Number of Spans, Main Unit 2

46) Number of Approach Spans 0

107) Deck Structure Type 6 Corrugated Steel

108) Wearing Surface/Protective System:

A) Type of Wearing Surface 9 Other

B) Type of Membrane 0 None

C) Type of Deck Protection 0 None

AGE AND SERVICE

27) Year Built 1969 106) Year Reconstructed 1990

42) Type of Service:

A) On 1 Highway B) Under 5 WATERWAY

28) Number of Lanes:

A) On 2 B) Under 0

29) Average Daily Traffic 200 Half ADT?: No

109) Percent Truck 7 %

30) Year of ADT 1993

19) Bypass, Detour Length 4 miles

GEOMETRIC DATA

48) Length of Max Span 36 ft

49) Structure Length 75 ft

50) Curb or Sidewalk Widths:

A) Left 0.0 ft B) Right 0.0 ft

51) Brg Rdwy width,curb-curb 23.4 ft

52) Deck Width, Out-Out 24.1 ft

32) Approach Roadway Width 18 ft

33) Bridge Median 0 No Median

Deck Area 1807 sqft

34) Skew Angle 10 deg

35) Structure Flared 0

10)Inv. Rte. Min. Vert Clearance 99 ft 99 in

47) Log Inv. Rte. Total Horiz Clr.: 23.4 ft

47) RLog Inv. Rte. Total Horiz. Clr.: ft

53) Min Vert Clearance Over Bridge 99 ft 99 in

54) Min Vert Under Clearance N Ref 0 ft 0 in Ref

55) Min Lat Under Clearance on Right N Ref 99.9 ft Ref

56) Min Lat Under Clearance on Left 0.0 ft

BRIDGE COMMENTS

STRUCTURE EVALUATION

SHEET 2 OF 2 FORM BRI-19 REV 10/00

SHEET 4 OF 28 (INSP. REPORT)

Bridge Number	04601	NBIS Length	
Town Name	CHAPLIN	Yes 75	
Facility Carried	NO BEAR HILL ROAD		
Feature Crossed	NATCHAUG RIVER		

Inspected By: S. Bender & P. Venoutsos

CLASSIFICATION

Item	Code	Description
112) NBIS Bridge Length	Yes	
104) Highway System	0	Off System
26) Functional Class	9	Rural Local
100) Defense Highway	0	Not Defense Highway
101) Parallel Structure	N	No parallel structure exists
102) Direction of Traffic	2	2-way traffic
103) Temporary Structure		
110) Designated National Network	0	Not on national network
20) Toll	3	On Free Road
21) Maintain	3	Town or Township Highway Agency
22) Owner	3	Town or Township Highway Agency
Report Class	L	LOCAL
37) Historical Significance	5	Bridge is not eligible for National Register

WATERWAY

Item	Code	Description
DrainageBasinCode	3200	
38) Navigation Control	0	No navigation control on waterway
39) Navigation Vert Clr.	0	40) Navigation Horiz Clr. 0
116) Vert-Lift Brg Nav Min		
111) Pier Abutment Protection		

PROPOSED IMPROVEMENTS

75A) Type of Work Proposed

75B) Work Done By

76) Length of Struct. Improvement ft ft

94) Bridge Improvement Cost $

95) Roadway Improvement Cost $

96) Total Project Cost $

97) Year of Improvement Cost Est.

114) Future ADT 115) Year Future ADT

List No. Project No. Advertised

POSTED SIGNS & UTILITIES

Item	Value	Item	Value
Other Posted Signs 1	0		BLANK JD
Other Posted Signs 2	0		
Actual P.L. Single Unit Truck	tons	Actual P.L. 4Axle Truck	tons
Rec. P.L. Single Unit Truck	tons	Rec. P.L. 4Axle Truck	30 tons
Actual P.L. Semi-TrailerTruck	tons	Actual P.L. 3S2 Truck	tons
Rec. P.L. Semi-TrailerTruck	tons	Rec. P.L. 3S2 Truck	tons
Rec. P.L. All Vehicles	tons	Actual P.L. All Vehicles	30 tons
Posted Vert Clearance On Bridge	0 ft 0 in		ft in
Posted Vert UnderClearance	0 ft 0 in		ft in
Posted Speed Limit	0 mph		mph
Utility			

BLANK JD

LOAD RATING AND POSTING

Item	Code	Entry	Item	Code
31) Design Load	0		Evaluation Code	L
63) Operating Rating Type	1		Year of Evaluation	1998
64) Operating Rating	36.0		70) Bridge Posting	2
65) Inventory Rating Type	1		41) Structure Status	P
66) Inventory Rating	21.0	21.5 JD	Posted for load	

CONDITION

Item	Code	Rating	By
58) Deck	5	5	JD
59) Superstructure	5	4	JD
60) Substructure	5	4	JD
61) Channel & Chan. Protection	6	6	JD
62) Culverts	N	N	JD

APPRAISALS

Item	Code	Rating	By
67) Structure Evaluation	5	4	JD
68) Deck Geometry	4	4	JD
69) Under Clear Vert & Horiz	N	N	JD
71) Waterway Adequacy	4	4	JD
72) Approach Rdwy Alignment	6	8	JD
113) Scour Critical	3		

Items 58 Thru 72 Checked By: JD

36) Traffic Safety Features:

Item	Code
A) Bridge Railings	0
B) Transitions	0
C) Approach Guardrail	0
D) Approach Guardrail End	0

OTHER FEATURES

Item	Value	Item	Value
Fence Required	No	Barrel Ladder	No
Fence Present	No	Stand Pipes	No
Fence Height	0.0 ft	Cat Walks	No
Fence Type	0	Movable Inspection System	No
Fence Material	0	Loose Concrete Checked?	No
Fence Top Type	0		

INSPECTION COMMENTS

Proposed Next Indepth Insp Year	2009
Senior	daiglejl
Supervisor	vanallenrv

REVIEWED BY: J. Daigle Date 10-10-03